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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,677	10/17/2006	Heather K. Kranz	58913US004	1712
32692	7590	06/04/2010		
3M INNOVATIVE PROPERTIES COMPANY				
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ST. PAUL, MN 55133-3427				
EXAMINER				
NELSON, MICHAEL B				
ART UNIT		PAPER NUMBER		
1783				
NOTIFICATION DATE		DELIVERY MODE		
06/04/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com

LegalDocketing@mmm.com

### Office Action Summary

**Application No.**

10/564,677

**Applicant(s)**

KRANZ ET AL.

**Examiner**

MICHAEL B. NELSON

**Art Unit**

1783

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 31-42 and 51-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 31-42, 51-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendments filed on 02/16/10 have been entered. Claims 31-42, 51-54 are currently under examination on the merits. Some of the 112 2<sup>nd</sup> paragraph rejections have been withdrawn due to applicant's amendments while others remain.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 42 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 42 recites the phrase "intermingle" which is vague and indefinite in that it is unclear if intermingle is meant to mean that the materials from the different layers of the stack melt and form a new layer from a mixture of said melted materials or if it is simply meant to convey that the layers are in mutual communication with one another.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
7. Claims 31-35, 37-42, 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (WO 01/096104) in view Stefanik (U.S. 4,046,951).

Regarding claims 31 and 53 and 54, Liu et al. discloses a non-metallic polymer based optical film which achieves the instantly claimed optical properties (See Claims 14 and 20). Liu et al. also discloses that delamination of the layers in the film should be avoided (first full paragraph, page 25). Liu et al. discloses a laminate with more than 100 layers which is bonded on both sides by PVB and then bonded on those both sides by glass (Example 2, Page 29-30 and Fig. 3). Liu et al. does not disclose the peripheral sealing of the multilayer film.

Stefanik discloses a method of fusing together the layers of a polymeric multilayer article before autoclaving to protect the laminate from exposure (C2, L35-60, Fig. 2, C5, L20-C3, L35 and C4, L30-45). Since the fusing process is intended to protect the layers even after autoclaving the bond will remain intact and thereby prevent delamination. One having ordinary skill in the

art at the time of the invention would have found it obvious to have applied the bonding edge sealant to the optical microlayer film of Liu et al. in order to protect the layers from exposure and also to help bind the layers together through out the glazing process.

Regarding the depth of the fusing, the edge sealing films having been applied to the edge of the multilayer become part of the multilayer and have a depth of greater than 10 microns (C5, L55-67). Also, while the fusing of the layers is accomplished before autoclaving merely by the attached edge seal layers of Stefanik, Liu also discloses that during the autoclaving process temperatures and pressures are used to cause the layers in between the two glass laminates to soften and bond together with one another (Page 27). Hence during the autoclaving the edge sealing layers and the PVB layers would be fused with the multilayers (and the multilayers with themselves) due to the heat and pressure of the autoclaving process. The layers are considered fused therebetween in the sense that they are all fused together with the edge sealing layers of Stefanik and are bonded in that state between each other.

Regarding claim 32, the edge sealing layers of Stefanik are only applied along the periphery of the interlayers and would reduce delamination. Regarding claim 33, Liu et al. discloses a laminate with more than 100 layers which is bonded on both sides by PVB and then bonded on those both sides by glass (Example 2, Page 29-30 and Fig. 3). With respect to claim 34, Liu discloses that the PVB layers are laminated (i.e. fully bonded) to the microlayer stack (Fig. 3). Since the sheets are coextensive, the bonding of the optical film and the PVB layers is considered fully bonded. With respect to claim 35, the peripheral edges of all the layers in the glazing assembly are disclosed as being substantially coextensive (Fig. 3). With respect to claim 37 and 40, since the bonding PVB layers do not surround the exposed edge of the optical film

(Fig. 3) the optical film is not fully encapsulated by the bonding layers. With respect to claims 39, 41, 42, Stefanik shows that the bonding layers, 42, 44 and 46 (Fig. 2) are attached (i.e. fused) to all the layers of the laminate (i.e. they run perpendicular to the layers). The layers of the optical stack are considered to intermingle since all of the layers (24, 26, 28...) are joined together by one continuous strip of bonding agent (42, 44 and 46). Also during the autoclave process described in Liu (page 27), the layers being laminated, including the edge sealing layers of Stefanik, would intermingle to some degree. The multilayer film is also considered intermingled merely by having the alternating layers of different materials (i.e. the layers are intermixed). The thickness of the bonding layers is greater than 10 microns (C5, L55-67). With respect to claim 38, the glazing of modified Liu et al. would be suitable for a vehicle window. With respect to claims 51 and 52, Liu et al. discloses a non-metallic polymer based optical film which achieves the instantly claimed optical properties (See Claims 14 and 20).

8. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (WO 01/096104) in view of Stefanik (U.S. 4,046,951) as applied to claim 33 above, and further in view of Gourio (U.S. 6,334,382).

Regarding claim 36, modified Liu et al. discloses all of the limitations as set forth above. Liu et al. does not disclose that the optical film extend beyond the peripheral edge of the bonding layers. Gourio discloses an optical laminate in which an optical layers (3 and 2) extends past the bonding layers (9) (Fig. 2). Gourio also discloses that bonding layer 9 can be made into two separate layers on either side of the optical layer (3 and 2) by reducing the gap between portion 3

and portion 2 (C3, L25-50). The extension of the layer (i.e. portion 3) is disclosed as improving impact resistance of the glass laminate (C2, L5-20).

The inventions of both modified Liu et al. and Gourio are drawn to the field of optical laminates and therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the optical film layer dimensions of modified Liu et al. by extending the layer as taught by Gourio for the purposes of imparting improved impact resistance.

#### ***Response to Arguments***

9. Applicant's arguments filed on 02/16/10 are considered moot in light of the new grounds of rejection which were necessitated by applicant's amendments. Arguments which are still deemed valid are addressed below.

10. Applicant argues against the 112 2<sup>nd</sup> paragraph rejection of "intermingled" and points to the specification for clarification however at the cited portion intermingled is only mentioned and clarified to also mean "co mingled" and this does not remedy the confusion described in the rejection. The definition of intermingled is to be intermixed or mixed together and therefore it is unclear, even in light of the cited portion of the specification, if the intermingled means that the layers are intermixed in the sense that they are a stack of mixed layers (i.e. Layer A, Layer B, Layer A, Layer B....) or if they are intermixed in the sense that they are melt bonded together. If applicant intends the later definition, as it appears they do, the claims should be amended to further specify the nature of the intermingling.

11. The examiner also points out that "fused" is not defined as requiring the melt bonding of the later definition of intermingled. Two layers are fused merely by being adhesively attached

and the sealing layers of Stefanik fuse the interlayers together by bonding them together. This is also considered a chemical reaction bond of the kind mentioned in the instant specification. Also, as explained above in the office action, the autoclaving of the multilayer with the sealant layers (the sealant layers being part of the multilayer) would result in the sealant layers also bonding from heat and pressure. In short, the sealant layers of Stefanik fuse the other multilayers either by chemical adhesive means or, due to autoclaving, by heat and pressure.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL B. NELSON whose telephone number is (571) 270-3877. The examiner can normally be reached on Monday through Thursday 6AM-4:30PM.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patricia L. Nordmeyer/  
Primary Examiner, Art Unit 1783

/MN/  
05/24/10